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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Karl Schermanz

16785.1

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7590

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EXAMINER

DARJI, PRITESH D

ART UNIT

PAPER NUMBER

4181

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/595,795	Applicant(s) SCHERMANZ ET AL.	
	Examiner PRITESH DARJI	Art Unit 4181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/11/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 2 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: Definition of "/" is not provided in specification. (from REVO/S, claim 1, line 2) Without a proper definition, scope of claim is hard to be determined about that component.

Regarding claim 2, the phrase "**particularly** one of the groups of" in line 2 renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. Proper phrases and only one group of element are needed to clarify scope of claim.

Regarding claim 4, the phrase "**particularly** in an amount of" in line 3 renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are

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part of the claimed invention. Proper phrases and only one range of weight percent are needed to clarify scope of claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1,5,6,7,10,11,14 and 15 are rejected under 35 U.S.C. 102(b) as being unpatented by Schneider et al. (US 4719192).

Schneider et al. teaches process of decreasing the content of nitrogen oxides in the flue gases. Schneider et al. gives the following information on column between lines 30-40. Table below uses similar limitations as claim 1.

Claim 1 teaches catalyst composition containing specific amounts of rare earth metals, vanadium, oxygen, titanium dioxide and tungsten dioxide. Regarding to claims 1 and 11, Schneider et al. teaches catalyst composition of titanium dioxide, tungsten dioxide with oxides of vanadium and cesium. The weight percentage of elements in the table below anticipates limitations of claim 1.

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$\text{TiO}_2 =$	10-60 Gew. %
WO_3 and/or $\text{MoO}_3 =$	1-25 Gew. %
$\text{V}_2\text{O}_5 =$	0,1-25 Gew. %
$\text{CeO}_2 =$	1-25 Gew. %

(Column 4, between lines 30-40)

(Table I)

Claims 5, 10 and 11 teach process of preparing catalyst composition comprising specific amounts of titanium dioxide, tungsten oxide with a solution containing a vanadium salt and a salt of rare earth metal. Regarding to claim 5, Schneider et al. teaches appropriate use of $\text{Ce}(\text{SO}_4)_2$ (column 4, line 4) and vanadium salt (column 4, line 20). $\text{Ce}(\text{SO}_4)_2$ can be used as cesium salt. In addition to elements of Table I with cesium and vanadium salt, Schneider et al. will anticipate claim 5.

Claims 6 and 14 teach catalyst composition comprising specific amounts of titanium dioxide, tungsten oxide with a vanadium salt and hydroxide of one rare earth metal. Regarding to claim 6, Schneider et al. teaches use of metal hydroxide to be converted to metal oxide (Column 3, line 66) and vanadium salt (column 4, line 20). Rare earth metal hydroxides can be used as starting compounds or their oxides after converting from hydroxides. In addition to elements of Table I with hydroxide of rare earth metal and vanadium salt, Schneider et al. will anticipate claims 6 and 14.

Claims 7 and 15 teach catalyst composition comprising specific amounts of titanium dioxide, tungsten oxide with Vanadate of at least one rare earth metal. Regarding to

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claim 7, Schneider et al. teaches Vanadate as a starting compound of vanadium.

Vanadate could be reacted with rare earth metal to get rare earth metal's Vanadate. In addition to elements of Table I with possible Vanadate of rare earth metal, Schneider et al. will anticipate claims 7 and 15.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, 8, 9, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider et al. in view of Woodfield et al. (US 7037463) .

Schneider's teaching is mentioned in immediately above in 102 rejection.

With respect to claims 2 and 3, Schneider teaches catalyst with compositions of rare earth metal, vanadium, oxygen, titanium dioxide and tungsten oxide.

Schneider doesn't expressly teach rare earth metal in the catalyst is one of Er and Tb.

However, in a method of producing titanium bases alloy, Woodfield et al. teaches to use Vanadium oxide and Erbium oxide for solid-phase reduction (column 6, line 54).

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At the time of invention it would have been obvious to a person of ordinary skill in the art to perform the process of Schneider et al. using Erbium Oxide in view of Woodfield et al. The suggestion or motivation for doing so is showing Erbium can be reacted with Vanadium so there wouldn't be any hesitation reacting both Erbium and Vanadium. In addition, Erbium also lowers hardness and improves workability, which can promote to react both.

With respect to claims 8, 9, 16 and 17, Schneider teaches catalyst with compositions of rare earth metal salt, vanadium salt, oxygen, titanium dioxide and tungsten oxide.

Schneider doesn't expressly teach rare earth metal in the catalyst is one of Er and Tb.

However, in a method of producing titanium bases alloy, Woodfield et al. teaches to use Vanadium oxide and Erbium oxide for solid-phase reduction (column 6, line 54). At the time of invention it would have been obvious to a person of ordinary skill in the art to perform the process of Schneider et al. using Erbium Oxide in view of Woodfield et al. The suggestion or motivation for doing so is showing Erbium can be reacted with Vanadium so there wouldn't be any hesitation reacting both Erbium and Vanadium. It could also apply while reacting with salts of erbium and vanadium. In addition, Erbium also lowers hardness and improves workability, which can promote to react both.

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Claims 4, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider et al. in view of Inoue et al. (US 4221768).

With respect to claim 4, Schneider teaches TiO₂ and WO₃ with some other elements as part of catalyst composition.

Schneider doesn't expressly teach weight percentage of SiO₂ in support.

However, in a method of purifying exhaust and waste gases, Inoue et al. teaches to use of TiO₂ and SiO₂. (Column 2, line 54).

At the time of invention it would have been obvious to a person of ordinary skill in the art to perform the process of Schneider et al. using SiO₂ in view of Inoue et al. The suggestion or motivation for doing so is that TiO₂ – SiO₂ exhibits a good ability to remove NO_x over a very broad range of temperatures.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider et al. in view Woodfield et al. as applied to claims 2 and 3 above, and further in view of Inoue et al. (US 4221768).

With respect to claim 12, Schneider teaches TiO₂ and WO₃ with some other elements as part of catalyst composition.

Schneider doesn't expressly teach weight percentage of SiO₂ in support.

However, in a method of purifying exhaust and waste gases, Inoue et al. teaches to use of TiO₂ and SiO₂. (Column 2, line 54).

At the time of invention it would have been obvious to a person of ordinary skill in the art to perform the process of Schneider et al. and Woodfield et al. using SiO₂ in view of

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Inoue et al. The suggestion or motivation for doing so is that $\text{TiO}_2 - \text{SiO}_2$ exhibits a good ability to remove NO_x over a very broad range of temperatures.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PRITESH DARJI whose telephone number is (571)270-5855. The examiner can normally be reached on Monday to Thursday 8:00AM EST to 6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on 571-272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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PD

/Vickie Kim/

Supervisory Patent Examiner, Art Unit 4181